

ABSTRACT OF THE DISCLOSURE

A shoulder arthroplasty apparatus includes a stemless humeral head for coupling to a previously cut humeral surface. The base of the humeral head has a stabilizing base extension that is impacted into a cancellous region of the cut humeral surface. A preferred base extension has a cruciform shape including two planar fins intersecting at or near the center of the base. The periphery of the humeral head is formed to match the cortical margins of the cut humeral surface. The humeral head is preferably cemented or press-fit to the humeral surface. The humeral head has any of a range of peripheral shapes and sizes matching the specific shape and size of the anatomic neck of a humeral surface. A method for performing the shoulder arthroplasty includes a new surgical approach using a guide to cut accurately and safely on the anatomic neck of the humerus and another guide to properly orient the reaming of the glenoid.